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Project Name: BLACKBURN MEADOWS WwTW, SLUDGE STRATEGY Project No: A1017-11

Borehole ID: BH9R

Location: Blackburn Meadows Sludge Co-ords (British National Grid): 440351.14 - 391918.07 Level: 31.29

Hole Type: CP+RC Logged By: Dates: 2011-03-28 - 2011-03-29

Client: Black & Veatch Limited Contractor: SOIL MECHANICS Project Engineer:

Plant	t Used:	SPT Hammer	Serial N	0:					
		Samples	3						Depth
Well	Water	Depth (m)	Туре	Result	Depth (m)	Level (m)	Legend	Stratum Description	m
		0.0 0.1 - 0.5	GGG					Firm dark grey sandy slightly gravelly CLAY Gravel is angular to subrounded fine to coarse of various lithologies	_
K G	,	0.3	D					including brick concrete and sandstone MADE GROUND	
		0.5 - 0.95 0.5 - 1.0	D B	N=9 (1,2/2,2,2,3)					0.5
		1.0 - 1.45 1.0 - 1.5	D B	N=10 (1,2/3,3,2,2)					1.0 —
		1.5 - 1.95 1.5 - 2.0	D B	N=9 (1,2/2,2,2,3)				Firm brown mottled grey sandy slightly gravelly CLAY Gravel is angular to subrounded fine to coarse of various lithologies including brick concrete and sandstone MADE GROUND	1.5 — -
		2.0 2.0 - 2.45 2.0 - 2.5	D D B	N=11 (1,2/2,3,3,3)	2.00	29.29			2.0 —
		2.5 - 2.95 2.5 - 3.0	D B	N=10 (2,2/2,2,3,3)				Very stiff brown grey very sandy gravelly CLAY Gravel is angular to subrounded fine to coarse of various lithologies including brick concrete and sandstone MADE GROUND	2.5 —
		3.0 3.0 - 3.2 3.0 - 3.5	D D B	50 (13,3/50 for 51mm)	3.00	28.29			3.0 —
1831 B3		3.5 - 3.6 3.5 - 4.0	D B	50 (25 for 50mm/50 for 57mm)				Dense light brown gravelly SAND Gravel is subangular to subrounded of siltstone and sandstone MADE GROUND	3.5 —
		4.0 4.0 - 4 <u>.4</u> 5 4.0 - 4:5	D	N=31 (6,8/8,8,8,7)	4.00	27.29			4.0 —
	Y	4.5 - 4.95 4.5 - 5.0	D B	N=21 (4,5/5,6,5,5)	4.50	26.79		Stiff brown gravelly sandy CLAY Gravel is subangular to subrounded fine to coarse of sandstone and siltstone MADE GROUND	4.5 — -

Borehole Log

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Hole Type: CP+RC Logged By: Dates: 2011-03-28 - 2011-03-29

Client: Black & Veatch Limited Contractor: SOIL MECHANICS Project Engineer:

Plan	t Used:	SPT Hammer	Serial N	0:					
		Samples	5						Depth
Well	Water	Depth (m)	Туре	Result	Depth (m)	Level (m)	Legend	Stratum Description	m
	\forall	6.0 6.0 - 6.45 6.0 - 6.5	D D D B	N=32 (6,7/7,7,9,9)	6.00	25.29		Stiff brown gravelly sandy CLAY Gravel is subangular to subrounded fine to coarse of sandstone and siltstone MADE GROUND Dense brown sandy clayey rounded to subrounded fine to coarse GRAVEL with high cobble content Cobbles are rounded to subrounded of sandstone and siltstone	5.5 — 6.0 — 6.5 — 7.0 —
		7.5 - 7.95 7.5 - 8.0 8.0	D B	N=34 (7,8/9,8,8,9)	7.50	23.79	23.79	Dense brown and dark brown sandy very clayey subangular to rounded GRAVEL of sandstone and siltstone	7.5 — - 8.0 —
		9.0 9.0 - 9.2 9.0 - 9.5	ООВ	50 (8,12/50 for 57mm)	9.00	22.29		Very dense brown sandy very clayey rounded to subrounded fine to coarse GRAVEL with medium cobble content Cobbles are rounded of sandstone	9.0 — 9.5 —

Borehole Log

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Hole Type: CP+RC Logged By: Dates: 2011-03-28 - 2011-03-29

Client: Black & Veatch Limited Contractor: SOIL MECHANICS Project Engineer:

Plant	t Used:	SPT Hammer	Serial N	0:					
		Samples	;						Depth
Well	Water	Depth (m)	Туре	Result	Depth (m)	Level (m)	Legend	Stratum Description	m
		10.0	D D		10.30	20.99		Very dense brown sandy very clayey rounded to subrounded fine to coarse GRAVEL with medium cobble content Cobbles are rounded of sandstone	_
	abla	10.5 - 10.8 10.5 - 11.0	D B	50 (10,15/20,30)	10.50	20.79			10.5 —
		11.0	D					Very weak to weak thickly laminated light blueish grey MUDSTONE Recovered as clayey angular to subangular fine to medium gravel	11.0 —
									11.5 —
		12.0 12.0 - 12.1 12.0 - 12.5	D D B	50 (25 for 48mm/50 for 57mm)	12.00	19.29		Moderately weak thickly laminated light blueish grey MUDSTONE Recovered as clayey angular to subangular fine to coarse gravel	12.0—
								Very weak MUDSTONE Recovered as clayey angular to subangular fine to coarse gravel	- 12.5 — -
		12.9 12.9 - 13.0	D D	50 (25 for 50mm/50 for 70mm)	12.90 13.00	18.39 18.29			13.0 —
								Moderately weak to moderately strong very thinly laminated light bluish grey MUDSTONE Recovered as clayey angular gravel	13.5 —
								Extremely weak to very weak grey thinly laminated MUDSTONE Fractures are	14.0—
		14.15 - 14.26	CS					laminated MUDSTONE Fractures are subhorizontal extremely to very closely spaced tight planar smooth with occasional soft grey clay and gravel infill	- 14.5 <i>-</i>
		14.5 - 14.6 14.5 - 14.62	88 88						-

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Hole Type: CP+RC Logged By: Dates: 2011-03-28 - 2011-03-29

Client: Black & Veatch Limited Contractor: SOIL MECHANICS Project Engineer:

Plant	Plant Used: SPT Hammer Serial No:								
		Samples	3						Depth
Well	Water	Depth (m)	Туре	Result	Depth (m)	Level (m)	Legend	Stratum Description	m
		15.88 - 15.93	CS					Extremely weak to very weak grey thinly laminated MUDSTONE Fractures are subhorizontal extremely to very closely spaced tight planar smooth with occasional soft grey clay and gravel infill	15.5 —
		17.93 - 18.07	CS						17.0 — 17.5 —
								Weak grey SILTSTONE	18.5 — 19.0 —
					19.72 20.00	11.57 11.29	× × × ×		19.5 —

GENERAL REMARKS

Hammer ID: JB02. Rod type: NWY.